REMARKS

In response to the pending Office Action, Applicants provide the following remarks to address the issues cited by the Examiner.

Claims 59, 60, 65, 68 and 70 have been amended, and no claims have been added or cancelled; therefore, claims 55-78 remain pending in the application. It is respectfully submitted that no new matter has been introduced by these amendments, as support therefor is found throughout the specification, claims and drawings as originally filed. In view of the above amendments and the following remarks, it is respectfully submitted that all of the pending claims are allowable.

The Applicants gratefully acknowledge the Examiner's indication that claims 55-67 and 74-78 are allowed, and that claim 70 would be allowable if rewritten in independent form. Accordingly, claim 70 has been rewritten in independent form and is believed to be in condition for allowance.

Claim 69 stands rejected under 35 U.S.C. § 112, second paragraph, for the reason cited on page 2 of the Office Action. In view of the above amendment to claim 69, it is respectfully submitted that this ground for rejection has been obviated. Specifically, claim 69 has been rewritten in independent form such that the preamble recites "a swirl disk in combination with an orifice disk for use in a spray nozzle", and therefore is entirely consistent with the body of the claim that recites further details of the swirl disk and orifice disk. Accordingly, it is respectfully submitted that the rejection of claim 69 under 35 U.S.C. § 112, second paragraph, has been obviated. In view of the fact that this claim was rejected only under § 112, and not based on the prior art, it is respectfully submitted that this claim is in condition for allowance.

Claims 68 and 71-73 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,904,263 to Tate et al., hereinafter "Tate", in view of U.S. Patent No. 2,746,801 to Curran, hereinafter "Curran". The Examiner's grounds for rejection are hereinafter traversed, and reconsideration is respectfully requested.

The Examiner states with respect to usage of the term "etched" in the claims: "As to the use of the term 'etched', note that the claims are considered product-by-process claims." (Office Action at 3). However, the term "etched" specifically has been held to be a structural limitation rather than a process limitation. In Ex Parte Scheckner, 1903 Dec. Com. Pat. 315, 316 (1903) (copy enclosed), the Commissioner held as follows: "An etched plate has certain well-known physical characteristics, and these characteristics are made clear and explicit by the use of the word 'etched' in defining them. Claim 7 therefore defines the article in terms of its structure and is not objectionable." See also In re Garnero, 162 U.S.P.Q. 221, 223 (C.C.P.A. 1969) (Citing Ex Parte Scheckner with approval).

The Ex Parte Scheckner case dictates the same conclusion here. The usage of the term "etched" to further define the "etched peripheral portion", the "etched first region" and the "etched second region" imparts distinct, well understood structural characteristics to the claimed swirl disk, and therefore is a structural limitation rather than a process limitation. Indeed, the present specification makes clear that the photochemical machining or "etching" imparts distinctive structural characteristics to the finished product. For example, the specification states: "One advantage of the photochemical machining process is that it allows the swirl and orifice disks to be etched from sheet material substrates in a manner that obtains sufficiently tight tolerances to produce extremely small droplet sizes that could not be achieved with certain prior art single fluid whirl nozzles (e.g., droplets with a Sauter Mean Diameter on the order of about 20 microns at about 1000 psi and at flow rates of less than or equal to about 0.05 gpm)." (Pub. No. 2006/0049282 at para. 62).

Further, the limitations in the preamble of amended independent claim 68 with respect to the spray nozzle including the retaining body and the orifice disk, limit the structure of the claimed invention and must be treated as claim limitations. More specifically, the description in the body of the claim with respect to the structure of the swirl disk, and the structure imposed on the swirl disk by the retaining body, orifice disk and retaining member (i.e., "wherein the swirl disk is receivable within the retaining body upstream of and contiguous to the orifice disk with the swirl chamber aligned and in fluid communication with the spray orifice of the orifice disk and at least one fluid passageway formed between the inlet aperture of the retaining body and the

flow inlet to the swirl chamber, and an opposite side of the swirl disk relative to the orifice disk is engageable by the retaining member to secure the swirl disk and orifice disk within the retaining body") establish that these limitations must be treated as claim limitations and operate to further distinguish the claimed invention over the cited prior art. See M.P.E.P. § 211.02 ("Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation."); and In re Stencel, 4 U.S.P.Q.2d 1071, 1073 (Fed. Cir. 1987) (recitation in preamble concerning "collar having plastically deformable lobes" is a claim limitation where the body of the claim describes "the driver in terms of the structure imposed upon it by the collar having plastically deformable lobes.").

Tate does not teach or suggest a swirl disk comprising a sheet material substrate defining a thickness within the range of about 0.003 inch to about 0.03 inch, an etched peripheral portion defining a peripheral edge of the swirl disk, an etched first region spaced inwardly relative to the peripheral edge and forming a first aperture extending through the first region and defining a swirl chamber of the swirl disk, and an etched second region of the sheet material substrate extending between the swirl chamber and peripheral edge and defining a second aperture extending through the second region and forming a flow inlet to the swirl chamber of the swirl disk, as recited in amended independent claim 68. To the contrary, Tate teaches a swirl chamber (25) formed within a machined swirl chamber body (26). (Tate at col. 1, line 66 – col. 5, line 5). Furthermore, as can be seen in FIG. 1 of Tate, the swirl chamber body (26) is more than twice as thick as the orifice disk (15), and is machined out of a substantial block of metal, not a thin etched sheet material substrate as defined in claim 68.

Curran does not materially add to the teachings of Tate. First, like Tate, Curran does not teach or suggest a swirl disk comprising a sheet material substrate defining a thickness within the range of about 0.003 inch to about 0.03 inch, an etched peripheral portion defining a peripheral edge of the swirl disk, an etched first region spaced inwardly relative to the peripheral edge and forming a first aperture extending through the first region and defining a swirl chamber of the swirl disk, and an etched second region of the sheet material substrate extending between the swirl chamber and peripheral edge and defining a second aperture extending through the second region and forming a flow inlet to the swirl chamber of the swirl disk, as recited in amended

independent claim 68. To the contrary, Curran makes no teaching or suggestion of such a swirl disk defining such an etched peripheral portion, etched first region, and etched second region. Rather, Curran teaches forming a stamped metering disk, not a swirl disk with the claimed etched portions and regions. Further, Curran does not teach or suggest such a swirl disk that is receivable within the retaining body upstream of and contiguous to the orifice disk, and an opposite side of the swirl disk relative to the orifice disk that is engageable with the retaining member to secure the swirl disk and orifice disk within the retaining body, as further recited in amended independent claim 68. To the contrary, Curran specifically teaches forming the "slotted metering disk . . . incorporated in **an assembly of sheet metal discs** arranged **to form a swirl chamber** and held together tightly in an axial direction so that they make joint on their flat surfaces." (Curran at col. 1, line 70 - col. 2, line 3). Curran makes absolutely no teaching or suggestion of forming the swirl chamber in an etched sheet material substrate defining a thickness within the range of 0.003 inch to about 0.03 inch, let alone such an etched substrate that is receivable within the nozzle retaining body contiguous on one side with the orifice disk and engageable on the other side with the retaining member, as recited in amended independent claim 68. Moreover, Curran effectively teaches away from the presently claimed invention by specifically teaching that the swirl chamber should be formed by multiple disks arranged together, and further, specifically claims "at least four superimposed and co-axial disks" forming the swirl chamber. (Curran at col. 3, lines 54-55). Accordingly, even if Curran were combined with Tate, the resulting combination would not meet the terms of the claimed invention. Rather, the resulting swirl chamber would be formed by multiple superimposed and coaxial disks as specifically taught by Curran.

It is therefore respectfully submitted that amended independent claim 68 is unobvious over Tate in view of Curran for at least these reasons. Because claims 71-73 depend either directly or indirectly from claim 68, and therefore include all of the limitations of claim 68, it is respectfully submitted that claims 71-73 are not rendered obvious by the combination of Tate and Curran for the same reasons as set forth above, and for reciting additional patentable subject matter.

Accordingly, it is respectfully submitted that claims 55-78 are allowable. All issues raised by the Examiner having been addressed, an early action to that effect is earnestly solicited. If the Examiner has any questions in connection with this paper, or otherwise if it would facilitate the examination of this application, he is respectfully requested to call the undersigned at the telephone number below.

No fee is believed to be required with this submission; however, in the event of a fee deficiency, authorization is hereby given to charge any required fee(s) to deposit account no. 50-3569.

Dated: April 28, 2009

Respectfully submitted,

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

IN

PATENT

AND

TRADE-MARK AND LABEL CASES

COMPILED FROM VOLS. 102, 103, 104, 105, 106, AND 107 OF THE OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE DURING THE YEAR

1903.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

important that the subject-matter claimed for the first time after the filing of an application be supported by an oath as it is that the original claims be so supported. When an application is filed, the presumption is that all the subject-matter thereof not embraced in the statement of invention or claims is not applicant's invention, and this presumption can only be overcome by presenting a claim or claims therefor accompanied by a proper oath. Ordinarily, therefore, a claim cannot be regarded as having any status in a case until it is supported by the oath required by the rules. Under certain conditions wherein the requirement of a supplemental oath might work a particular hardship on the applicant or cause him irreparable injury the requirement of a supplemental oath might be waived temporarily; but no such conditions appear to exist in the case under consideration.

The petition is accordingly denied.

EX PARTE SCHECKNER.

Decided September 4, 1903.

(106 O. G., 765.)

1. CLAIM TO ARTICLE—PROCESS OF MAKING ARTICLE—FORM OF CLAIM.

   It is the general rule that an article of manufacture should not be defined in the claim by the process of making it.

2. SAME—SAME—SAME.

   Where a claim to an article refers to an *etched* plate, *Held* not objectionable on the ground that it defines the articles by the process of making it, since etched plates have well-known physical characteristics.

ON PETITION.

PRINTING-PLATE AND PROCESS OF MAKING SAME.

Messrs. Carr & Carr for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Examiner objecting to certain claims of the above-entitled application "on the ground that the article purporting to be covered thereby is defined solely by reference to the process of manufacture."

The application includes claims for a photomechanical relief printing-plate and claims for the process of making the same. Some of the article claims which have not been objected to define the plate in terms of its structure. The general rule is that a claim for an article of manufacture should not be defined by the process of making the same. This rule is departed from only in cases where the article can be identified in no other way. (*Ex parte Painter*, C. D., 1891, 200; 57 O. G., 999.) The fact that claims are presented in this case which define the

article in terms of its structure is evidence of itself that the invention sought to be patented does not belong to the excepted class above referred to.

Of the two claims objected to one (claim 7) defines the article as an etched plate and the other (claim 8) specifies certain steps by means of which the etching is accomplished.

An etched plate has certain well-known physical characteristics, and these characteristics are made clear and explicit by the use of the word "etched" in defining them. Claim 7 therefore defines the article in terms of its structure and is not objectionable. Claim 8 specifies certain steps by means of which the etching is accomplished. The structure of the article when finished does not reveal the particular procedure specified in this claim.

The Examiner's objection to claim 8 is therefore well taken.

The petition is granted to the extent indicated.

EX PARTE FERRELL.

Decided September 5, 1903.

(106 O. G., 766.)

1. AMENDMENT—SHIFTING FROM ONE INVENTION TO ANOTHER—AMENDMENT NOT ENTERED.

   Where an application as filed covered an article and the process of making it and after action by the Office an amendment is presented embodying claims to the apparatus used in making the article, *Held* that the Examiner properly refused to enter the amendment.

2. SAME—SHIFTING GROUND—ELECTION—PRACTICE.

   A party will not be permitted to shift his ground from one invention to another merely because both were disclosed in the application. After limiting his claims to one invention he is bound by his election.

ON PETITION.

CONSTRUCTION OF CAST-IRON PIPES.

Messrs. G. H. & W. T. Howard for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Examiner refusing to enter a certain amendment.

It appears that the application as originally filed contained two claims, one drawn to cover a particular structure of cast-iron pipe and the other the method of making the pipe.

Upon the rejection of these claims in view of the prior art the applicant presented an amendment canceling them and substituting a single claim. The Examiner refused to enter this amendment on the ground that the claim embodied therein covered a distinct invention from that